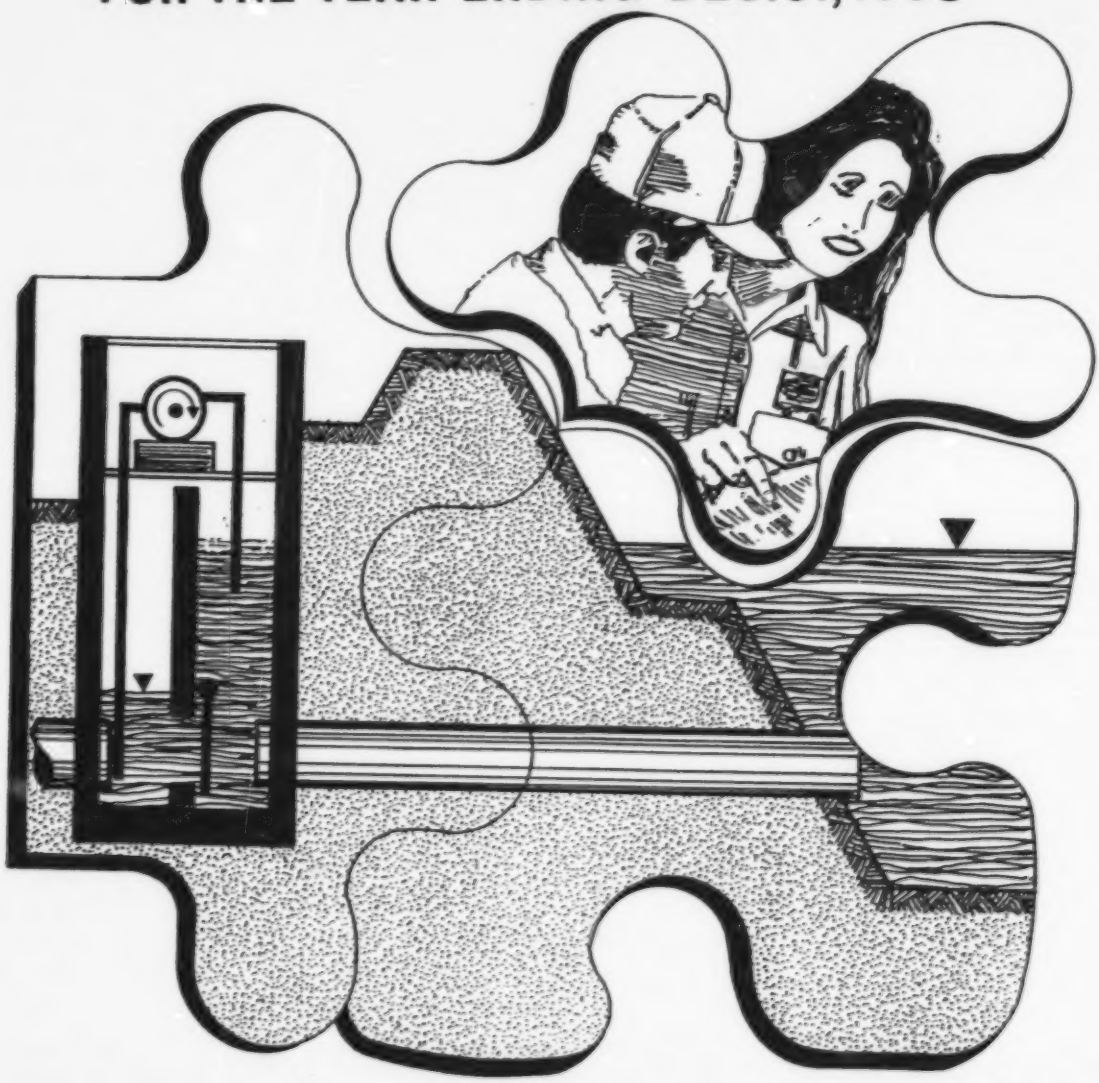
THE ANNUAL REPORT

OF THE

DYKING COMMISSIONER

•FOR THE YEAR ENDING DEC. 31, 1990



SUBMITTED TO:

The Hon. HARRY J. ENNS
Minister
Department of Natural Resources

SUBMITTED BY:

F. PENNER P. Eng.
Dyking Commissioner

Manitoba

91-05401/

Natural Resources

Water Resources Branch
1577 Dublin Avenue
Winnipeg, Manitoba
R3E 3J5
Tel: (204) 945-7404
Fax: (204) 945-7419

March 22, 1991

File: 11.1.5

The Honourable Harry J. Enns
Minister
Department of Natural Resources
Room 314 Legislative Building
450 Broadway Avenue
WINNIPEG, Manitoba
R3C 0V8

Dear Sir:

I have the privilege to submit, herewith, the Annual Report of the Dyking Commissioner as required under Section 15 of The Dyking Authority Act.

This report covers the appraisal of the Greater Winnipeg Dyking System and ancillary Pumping Stations for the 1990 calendar year, to determine its adequacy to provide flood protection for the City of Winnipeg.

Please note that the Act does not require this report to be tabled in the Legislature.

Yours truly,

F. Penner, P. Eng.
Dyking Commissioner

FP/jj

Enclosure

Manitoba
Natural Resources
1930 60 1990

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1 Acknowledgements

Evaluation of the adequacy of the dyking system is based mainly on reports provided by the staff of the City of Winnipeg and the University of Manitoba. Their cooperation in providing annual reports and technical advice is gratefully acknowledged.

2 The Dyking Authority Act of 1952

The Dyking Authority Act D110, passed in 1952, was intended to ensure that the dykes and pumping stations constructed subsequent to the 1950 flood were maintained in a state of readiness to combat future floods. In fact, the full title of the Act is *An Act to Provide for the Maintenance of Dykes and Pumping Stations in Greater Winnipeg.*

While authority and control over dykes and pumping stations was vested with the city or rural municipality in which they were situated, provision was made for the appointment of a Dyking Commissioner with powers to inspect dykes and pumping stations and to order work to be undertaken to maintain an integrated system of flood defence as well as to establish the location of the line of defence.

The Dyking Commissioner was required to "before the first day of April in each year, to make to the Minister a report on the administration and carrying out of the provisions of this Act during the year ending on the thirty-first day of December next preceding the making of the report, and on the condition of the dykes, pumping stations, and pumps, and their sufficiency for the purposes for which they were constructed or installed".

3 Changes Since 1952

Several major changes have taken place since the passing of the Act in 1952.

1. Major flood control projects affecting the City of Winnipeg namely the Red River Floodway, Portage Diversion and Shellmouth Dam projects have been completed.

2. Urban development has taken place beyond the lines of flood defence established earlier.

3. The five cities and two rural municipalities subject to the Act have been replaced by a single city.

4. The Canada-Manitoba Flood Damage Reduction Agreement has produced an Interim Flood Risk Map designating Flood Risk Areas and Floodways in the City of Winnipeg and has defined certain criteria for developments dictated by flood levels.

4 Current Issues

These changes and other considerations have given rise to the following issues:

1. The flood defence lines as currently established need revision to recognize the reality of the Floodway and recent urban development.

2. The Dyking Authority Act needs to be updated in two general areas:

   - Its area of jurisdiction needs to be clarified. Specific issues are its application in the former "additional zone", to the University of Manitoba, to dykes forming part of the Red River Floodway and to provincial highways which may form part of a line of defence.

   - The standards for primary dykes need to be specified preferably by regulation under the Act.

3. In his 1985 report the Dyking Commissioner noted the last major flood fighting operation in the City occurred in 1966 and recommended a one or two day "extreme flood workshop" for staff from the City and Provincial Government Departments to ensure an awareness of the probability and nature of an extreme flood. A workshop held in February 1989 was useful in identifying issues and problems. Further action to resolve these is required.

4. A key dyke closure in the case of an extreme flood is the dyke crossing PTH 75 at the Floodway Control Structure under the jurisdiction of the Department of Natural Resources. The Dyking Commissioner is of the opinion that the size of the temporary closure should be reduced by placing permanent fill adjacent to the closure section and that culverts through the closure section should be removed or fitted with proper gates.

5. While the Dyking Commissioner considers the above issues to be important and to require action, he does not consider them of greater importance that the ongoing routine maintenance of pumping stations and gate chambers.

5 Current Action on Issues

The current status of action to resolve these issues is as follows:

1. The City is reviewing the Primary Dyking System for redesignation and possible extensions. Surveys of several redesignation areas and possible extensions have been completed. Plans are being prepared and will be submitted to the Dyking Commissioner for approval. A number of preliminary proposals have been reviewed with the Commissioner as noted in the City of Winnipeg report in Appendix C. However the pace of this work needs to be increased.

   The City is working closely with the Forks Renewal Corporation to ensure that flood protection in the area is maintained and enhanced where possible.

   The City has initiated a project to prepared updated maps of the primary dykes.

2. The Dyking Commissioner is advised that the Province is considering the City's request that the Designated Floodway Fringe Regulation /88R under the City of Winnipeg Act be revised to give the Dyking Commissioner or City Administrator authority to determine whether a development shall conform to the flood proofing criteria or to the primary dyke extension criteria. It is anticipated that a revised regulation will come into force in 1991.

3. On February 23, 1989 an Extreme Flood Workshop was held with good attendance from City of Winnipeg Departments, from the Manitoba Department of Natural Resources and from the Emergency Measures Organization. This was a useful first step. What is needed now, in the opinion of the Dyking Commissioner, is a simulation exercise to fight an extreme flood in order to test the capability of the City to fight an extreme flood.

4. The Department of Natural Resources has examined proposals to reduce the size of the PTH 75 closure but apparently has no plans to implement these because of budget restrictions.

6 Inspection of Facilities

The City and the University have ongoing inspection and maintenance programs.

I have been impressed with the degree of care and the associated costs which the City applies to its flood protection facility.

7 Reports by the City of Winnipeg and the University of Manitoba

A questionnaire was sent to the City and to the University requesting information for the purpose of preparing this report. A copy of the request and questionnaire is included in Appendix B. The replies to the questionnaire, included in Appendix C, indicate that inspections were carried out, and that necessary maintenance work was carried out. All facilities appear to be in satisfactory condition.

8 Operation of Pumping Stations and Gates

During the low 1990 spring flows, it was not necessary to activate any pumping stations or to close positive gates.

The City maintains and regularly updates a Flood Control Manual. It is anticipated that the entire manual will be revised and updated in 1991. The University maintains a similar manual.

It is ironic that the design and operation of the flood control system has achieved such a level of excellence that the public is largely unaware and hence unappreciative of this activity.

9 Additional Works Constructed

Repairs and improvements were made to a number of waste water outfalls as noted in the City report in Appendix C.

10 Recommendations

It is recommended that:

1. City of Winnipeg complete its study of the revision and extension of the line of flood defence as soon as possible.

2. The Dyking Authority Act be revised as appropriate.

3. The City and the Provincial Department of Natural Resources continue their efforts to test their flood fighting plans.

4. The Department of Natural Resources consider improving the dyke closure section at PTH 75 and the Floodway Control Structure.

11 Appendix A

City of Winnipeg Map - Showing District Boundaries,
Flood Defence Lines and Pumping Station Locations.

NORTH KILDONAN
WEST KILDONAN
EAST KILDONAN
WINNIPEG
JAMES AVE PUMPING STATION
JAMES
ST BONIFACE
TUXEDO
ST VITAL
FORT GARRY
START OF P/P NO 3 FILE NO 10-1-1029
END OF P/P NO 4 FILE NO 10-1-1029
START OF P/P NO 2 END OF P/P NO 3 FILE NO 10-1-1029
START OF P/P NO 1 END OF P/P NO 2 FILE NO 10-1-1029
START OF P/P NO 2 END OF P/P NO 2 FILE NO 10-1-1029
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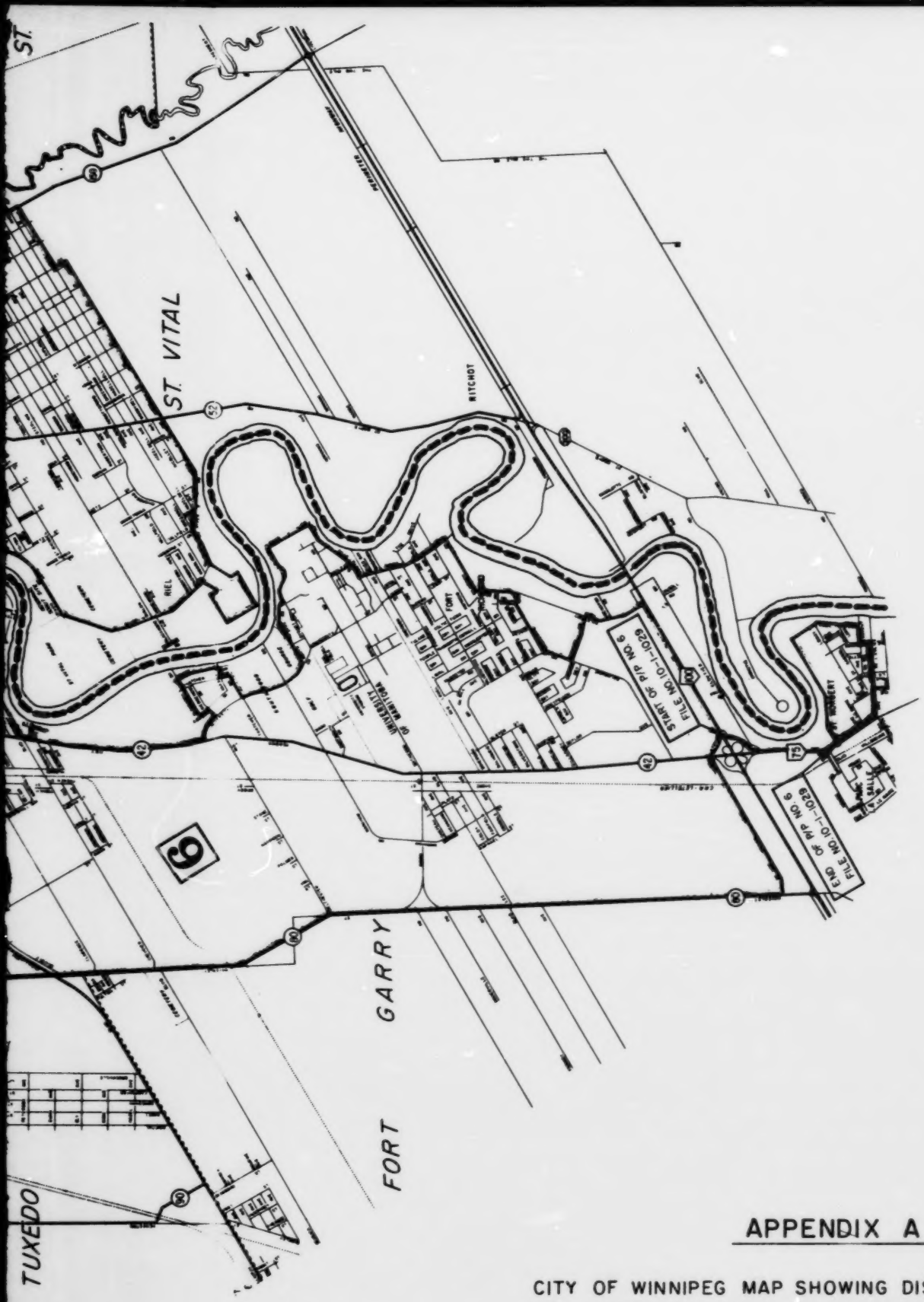

APPENDIX A

CITY OF WINNIPEG MAP SHOWING DISTRICT BOUNDARIES,
FLOOD DEFENCE LINES AND PUMPING STATION LOCATIONS.

FILE NO. 10-1-1039 C

12 Appendix B

Copy of Questionnaire Sent to:

The City of Winnipeg
and
The University of Manitoba

Water Resources Branch
1577 Dublin Avenue
Winnipeg, Manitoba
R3E 3J5
Tel: (204) 945-7404
Fax: (204) 945-7419

January 16, 1991

File: 11.1.5

Mr. Steve Yoshino
Director, Waterworks, Waste
and Disposal Department
The City of Winnipeg
1500 Plessis Road
Box 178 Transcona P.O.
WINNIPEG, Manitoba
R3C 2Z9

Dear Mr. Yoshino:

Dyking Commissioner's 1990 Annual Report

The Dyking Authority Action, Section 15, requires that:

> "The commissioner shall, before the first day of April in each year, make to the minister a report on the administration and carrying out of the provisions of this Act during the year ending on the thirty-first day of December next preceding the making of the report, and on the condition of the dykes, pumping stations, and pumps, and their sufficiency for the purposes for which they were constructed or installed."

To assist me in making this report I request that you supply me with a report on the dyking and pumping stations under your jurisdiction by March 15, 1991. For convenience, I am including a standard questionnaire similar to that used in previous years.

Please report also on the progress made to revise the lines of flood defense as discussed during the February 1989 Flood Workshop.

Yours truly,

F. Penner, P. Eng.
Dyking Commissioner

FP/jj
Attachment

Water Resources Branch
1577 Dublin Avenue
Winnipeg, Manitoba
R3E 3J5
Tel: (204) 945-7404
Fax: (204) 945-7419

January 16, 1991

File: 11.1.5

Mr. W. R. Wall
Associate Vice-President
University of Manitoba
WINNIPEG, Manitoba
R3T 2N2

Dear Mr. Wall:

Dyking Commissioner's 1990 Annual Report

The Dyking Authority Act, Section 15, requires that:

> "The commissioner shall, before the first day of April in each year, make to the minister a report on the administration and carrying out of the provisions of this Act during the year ending on the thirty-first day of December next preceding the making of the report, and on the condition of the dykes, pumping stations, and pumps, and their sufficiency for the purposes for which they were constructed or installed."

The assist me in making this report I request that you supply me with a report on the dyking system and pumping stations under your jurisdiction by March 15, 1991. For convenience, I am including a standard questionnaire similar to that used in previous years.

Yours truly,

F. Penner, P. Eng.
Dyking Commissioner

FP/jj

Attachment

QUESTIONNAIRE FOR THE ANNUAL REPORT ON THE PRIMARY DYKING SYSTEM WITHIN THE CITY OF WINNIPEG

1. For the Reporting Year

Please provide information concerning:

a) Difficulties and problems encountered.

b) Maintenance and repairs carried out.

c) New Sewer Outfall Gate Structures constructed.

d) Improvements and modifications carried out.

2. Proposed Plans for Future

Please provide information concerning proposed new structures, modifications to existing structures, and proposed improvements or additions to the dyking system. Also note any evaluation studies completed or underway in connection with the "Primary Dyking System".

Further, in view of the apparent and river bank stability problems, please provide information in regard to:

a) Evaluation of river bank stability in critical areas.

b) Monitoring of erosion of river banks in critical areas.

c) Any remedial works undertaken or completed in the reporting year.

3. Availability and Location of Proposed Borrow Pits

Indicate changes if any in availability and location of proposed borrow pits in the reporting year.

13 Appendix C

Replies to the Questionnaire in Appendix B

from
The City of Winnipeg
and
The University of Manitoba

THE CITY OF WINNIPEG
WATERWORKS, WASTE, AND DISPOSAL DEPARTMENT
1500 PLESSIS ROAD • BOX 178 TRANSCONA P.O. WINNIPEG • MANITOBA • R2C 2Z9
IN REPLY PLEASE REFER TO
FAX: (204) 224-0032

March 15, 1991

Manitoba Department of Natural Resources
1577 Dublin Avenue
Winnipeg, Manitoba
R3E 3J5

Attention: Mr. F. Penner, P. Eng., Dyking Commissioner

Dear Sir:

RE: DYKING COMMISSIONER'S 1990 ANNUAL REPORT
OUR FILE NO. RF-1

In reply to your letter of January 16th, 1991, please find attached the 1990 Flood Control Reports of the Waterworks, Waste and Disposal Department, the Operations Department, and the Streets and Transportation Department, with regard to Flood Pumping Stations and the Dyking System within the City of Winnipeg.

Yours truly

Steve S. Yoshino, P. Eng.
Director

DOM/jm

Attach.

WINNIPEG
..where the New West begins.

THE CITY OF WINNIPEG

FLOOD CONTROL REPORT

1990

The City of Winnipeg, Waterworks, Waste and Disposal Department is responsible for the Primary Dyking System and the flood pumping stations within the City of Winnipeg. The following report summarizes the operations of these facilities for the 1990 calendar year.

Throughout the year, all flood pumping stations were inspected once per week by the Collection Systems crews of the Waterworks, Waste and Disposal Department. All stations were checked for temperature, basement flooding and vandalism. All problems were repaired as soon as possible.

Commencing in the month of March, all stations were given a complete maintenance check to ensure that these facilities were ready for operation when required. This annual servicing includes:

i) lubricating and operating all positive gates on sanitary, storm and combined sewers;

ii) inspection of all wet well floats;

iii) lubricating and operating of all pumps and equipment within the station;

iv) inspection of all electrical main boxes, starter boxes and motors;

v) inspection of all high voltage transformers and equipment;

vi) inspection of automated control system, where installed.

The Red River reached a peak of 7.1 feet above City datum at James Avenue on April 5th, 1990. As the river's normal summer level is regulated at elevation 7.0, the 1990 spring runoff event was not significant, and no flood pumping stations were activated and no positive gates were operated. As such, the Annual Flood Activity Report was not produced for 1990.

During the months of October and November, all flood pumping stations were winterized in conjunction with the routine weekly checks. Twenty-four (24) flood pumping stations are now automated. This terminates the station automation program as all stations have been automated to activation at James Avenue datum elevation 19.

The Waterworks, Waste and Disposal Department, in conjunction with the six districts of the Operations Department, have continued in their efforts to upgrade the information provided in the Flood Control Manual. This information was assembled in an addendum form for use in 1990 and it is anticipated that the entire manual will be revised and upgraded in 1991.

Other 1990 issues pertinent to flood control include:

1.0 Extensions and Redesignations of the Primary Line of Flood Defence:

1.1 Investigations providing for extension of the Primary Line of Defence north of the Bergen Cut-off (in District #4) are on-going, in association with development applications on the Cut-off, and with the construction of the Kildonan Corridor Bridge embankment now complete. A box culvert was constructed and accepted by the City

at the McLeod Creek crossing, including a temporary flood pumping structure complete with flap/positive gates. The structure is designed for expansion of permanent pumping at such time as flows from a future underpass at Henderson Highway are accommodated.

1.2 The most recent extension of the primary dyke along the north limit of the Normand Park Development (in District #5) was completed in December, 1989. The Waterworks, Waste and Disposal Department will be proceeding with application for redesignation of the dyke once final acceptance is issued. Final acceptance has been held pending restoration of a damaged portion of the dyke.

1.3 Extension of the primary dyke in the Riverpointe Development (in District #5) from the St. Amant Centre dyke to the Bishop Grandin bridge abutment is complete, except for some minor deficiencies regarding sodding and land drainage sewer outfall revetment. The Waterworks, Waste and Disposal Department will be proceeding with application for redesignation of the dyke once final acceptance is issued.

1.4 Land acquisition of private lands is essentially complete along the west Seine River bank. Land acquisition negotiations are on-going for private lands along the east Seine River bank. Once secured, the lands will accommodate relocation of the Seine River at a bend and stabilization and reconstruction of Evans Street (in District #5) from Gareau Street to Deniset Street for its proposed designation as a Primary Line of Defence. Some 200 dwellings and several

sewer overflows will be added to the City's flood protection system through this initiative.

1.5 An easement agreement has been finalized with the Catholic Parish of St. Norbert which will provide for the extension of the Primary Line of Defence (in District #6) south of the St. Norbert Cemetery between Rue St. Pierre and Seine River School Division property. The Waterworks, Waste and Disposal Department wrote to the school division requesting acquisition for an easement through their property.

1.6 Extension of the primary dyke in the Rivergrove Development (in District 3) surrounding Summerview Lane is complete, except for some minor deficiencies on the gate chamber. The Waterworks, Waste and Disposal Department will be proceeding with application for redesignation of the dyke once final acceptance is issued.

1.7 The Waterworks, Waste and Disposal Department is currently reviewing plans for relocation of the Primary Line of Defence from Assiniboine Avenue into the Bonnycastle Park Development. It is expected that minor changes in the landscape plan for the park will enable redesignation of the primary dyke.

1.8 A proposed development in North St. Boniface which involves the extension of the primary dyke along Rue Messager has renewed interest after three years. Approval-in-principle of the proposed

dyke extension is a requirement of the development agreement prior to development construction.

1.9 Further to the Dyking Commissioner's February 21st, 1990 letter, the Waterworks, Waste and Disposal Department acknowledges that requests for formal redesignation are pending on several other candidate primary dykes for which the Dyking Commissioner has provided his approval-in-principle. These are: St. Mary's Road; St. Anne's Road; and Plaza Drive. The Department expects to make progress on these items in 1991.

1.10 At the request of the Dyking Commissioner in January, 1991 the Waterworks, Waste and Disposal Department prepared a City of Winnipeg map highlighting the existing Primary Line of Defence as well as proposed extensions and redesignations of the Primary Line of Defence.

2.0 Extreme Flood Workshop

On February 23rd, 1989, the Extreme Flood Workshop was held to test the City of Winnipeg Peacetime Emergency Plan in response to a simulated Red River flood. The simulated event included: Red River flood peaking at elevation 26 at James Avenue - City datum (753.57 geodetic); Red River level upstream of floodway at elevation 770.0; floodway water level at elevation 763.0 at Kildare storm sewer outlet, and; a dyke breach on Churchill Drive at Maplewood Avenue.

The exercise was organized by the Manitoba Emergency Measures Organization and the Manitoba Department of Natural Resources. The exercise was well attended by representatives from the City of Winnipeg (Waterworks, Waste and Disposal Department, Operations Department, Winnipeg Hydro, Fire Department, Police Department) and other utilities (Manitoba Hydro, Inter-City Gas Company, Manitoba Telephone System). The objectives of the exercise were to: develop solutions; identify problems but not to resolve them, and; identify cooperation required with others.

3.0 "The Forks Renewal Corporation" Development - Primary Line of Defence

A City approved land drainage outfall and flood pumping station was constructed. City approval was conditional on the formal re-designation of the Primary Line of Defence, including the submission of a plan identifying utilities, dyke grades, alignments, sections, easements, suitable for submission to the Dyking Commissioner for his approval, and the execution of easement agreements. The Dyking Commissioner provided his advice to the City in this regard on September 9th, 1988, and again on August 28th, 1989 (for a revised alignment).

The Forks' Architect had revised the proposed dyke alignment twice during 1989 as a result of comments provided by the Waterworks, Waste and Disposal Department and the Dyking Commissioner. The second revised alignment (dated August 31st, 1989) was accepted and

the Waterworks, Waste and Disposal Department received plans identifying utilities, dyke grades, sections, easements and the gate chamber from The Forks' Consultant on August 22nd, 1990. The Waterworks, Waste and Disposal Department will be proceeding with application for redesignation of the dyke once final acceptance is issued. Final acceptance is being held subject to repair of deficiencies in the gate chamber.

4.0 Primary Line of Defence Mapping:

The Waterworks, Waste and Disposal Department is continuing a project initiated in 1986 to produce plan/profile maps of the City's 70 miles of primary dykes on aerial photo bases. Over 115 - "A1" drawings at 1:2000 scale will be produced. The drawings will update plans/profiles produced by the Provincial Water Control and Conservation Branch in 1967 in a modern, revisable format. The drawings will identify deficiencies in the dyking system, location of pipes, manholes, catch basins, outfalls and control chambers which breach the dyke, and areas where the dyke must be realigned to keep pace with development. Operations Districts #4 and #3 are 95% and 40% complete, respectively. The project is expected to be substantially complete by December,1992.

5.0 The City of Winnipeg Development Agreement Parameters:

In order to reinforce and clarify the administration of developer responsibilities towards the flood protection of proposed develop-

ments, and to complement the appropriate sections of the City of Winnipeg Act and of Manitoba Regulation 9/85 in this respect, the City has included flood protection (by floodproofing or dyking) in it's Development Agreement Parameters. The Development Agreement Parameters were adopted by Council on June 21st, 1989.

6.0 Proposed Amendments to Flood Proofing Criteria:

In September, 1986 and January, 1987 the Manitoba Water Resources Branch provided the City with an opportunity to review and provide input to its proposed amendments to Manitoba Regulation 9/85, Designated Floodway Fringe Area. A series of meetings were held and input from various City Departments was compiled into a revised draft and returned to the Water Resources Branch in April, 1989. In the meantime in 1988, Manitoba Regulation 9/85 was repealed by Regulation 439/88R. The latter regulation included a French version of Regulation 9/85 as well as minor changes to the English version.

In September, 1990 Manitoba Urban Affairs provided the City with the opportunity to review and comment on amendments to Regulation 439/88R. The amendments were basically the changes outlined in the City's response of April, 1989. Therefore, the Waterworks, Waste and Disposal Department responded with only a few comments. However, a major item was the request for a clause giving the Dyking Commissioner or City Administrator authority to determine whether a developer will conform with the flood proofing criteria or primary dyke extension criteria. Such a clause was confirmed to be included

in the redrafted regulation in November, 1990. At this time it is unknown whether the Province has re-enacted the Designated Floodway Fringe Regulation 439/88R.

7.0 Floodway Operations

One designate each from the City Waterworks, Waste and Disposal Department and the Provincial Water Resources Branch met on March 7th, 1989 to review the operational guidelines of the Winnipeg floodway. The City's objective is that the floodway operation should be modified to improve the level of protection in the City (ie. reduce the risk of basement flooding) by raising upstream water levels above natural conditions for a range of more frequent flood events (2 year to 20 year return periods). The Province's objective is to attempt to accommodate the City while respecting upstream interests. It was concluded that to modify the present floodway operating procedure would require a detailed analysis of simulated flood events including operation of the Assiniboine River Diversion at Portage La Prairie and a cost-benefit analysis of the flood level scenarios. The Water Resources Branch is undertaking a two year project to map the flood prone areas of the Red River Valley and priority is to be given to the areas immediately upstream of the floodway.

Flood planning was immediately improved with the establishment of communication protocols. The City is now made immediately aware of each stage or change during operation of the floodway and gates.

AED/DDM/PEAL:lh

1991 03 15

DDM

THE CITY OF WINNIPEG

INTER-OFFICE MEMORANDUM

MAR 1 1 00 PM '91

TO: Mr. G.K. Stewart, P.Eng.
Director of Operations
Operations Department
820 Elgin Avenue

FROM: G.A. Pekrul, C.E.T.
Technical Supervisor
Operations Department
District #1

FILE: FL-05a

DATE: 1991 02 05

RF-1

RE: DYKING COMMISSIONER'S 1990 ANNUAL REPORT

In reply to Mr. D.D. McNeil's memo which was forwarded to us from your office, the following is the District #1 reply to the Dyking Commissioner's questionnaire:

1. a) No difficulties or problems were encountered during 1990.

   b) Modifications and repairs took place on the outfall structures at Main Street, Donald Street and Kennedy Street in conjunction with the construction of the Assiniboine River Walkway.

   c) No new sewer outfall gate structures were constructed in 1990.

   d) Work continued throughout the year modifying the north bank of the Assiniboine River from Kennedy Street to Main Street for the Assiniboine River Walkway and at The Forks to continue the walkway and establish a boat basin. In conjunction with this work, surveys continued to modify the primary line of defence along Assiniboine Avenue and through The Forks as easement drawings were prepared for that area. Procedures were established to deal with the areas of The Forks development where the primary line of defence is below the 160 year flood protection level.

2. a) An engineering study commenced and instrumentation installed to monitor the north bank of the Red River at the Boyle Street Pumping Station.

   b) An area of riverbank erosion was discovered at the River Avenue sewer outfall on the south bank of the Assiniboine River opposite The Forks boat basin. An engineering report will be undertaken in 1991 to determine the cause.

Cont'd ...

c) An engineering study and design work were completed for repairs to the outfall structure and riverbank at the Tylehurst Sewer Outfall on the north bank of the Assiniboine River.

G.A. Pekrul, C.E.T.

GAP/rmk

cc D.D. McNeil, P.Eng. -91-02-01

FORM 5: 86 06

THE CITY OF WINNIPEG

DDM

INTER-OFFICE MEMORANDUM

To: D. McNeil, P. Eng.
Land Drainage & Flood Protection
Engineer.

JAN 31 10 18 AM '91

From: Steve Winch, C.E.T.
Technical Supervisor,
District #2, Operations.

Re: DYKING COMMISSIONER'S
1990 ANNUAL REPORT

Date: January 30, 1991.

The following is in reply to your memo of January 16, 1991.

1. For 1990 Calendar Year

RF-1

a) There were no problems or difficulties encountered.

b) Maintenance work was completed on the Voyageur Street/Crestview Park Drive outfall.

c) No new outfalls were constructed.

d) No improvements or modifications were made.

2. Proposed Plans for Future

No new structures, modifications to existing structures, improvements or additions to the dyking system have been proposed for this year.

a) No information is available.

b) No information is available.

c) No remedial work was undertaken or completed in 1990.

Gerry Irving

for S. Winch, C.E.T.
Technical Supervisor
District #2, Operations

THE CITY OF WINNIPEG

RECEIVED
FEB 11 1 48 PM '91

INTER-OFFICE MEMORANDUM

TO: Mr. D. D. McNeil, P. Eng.
Land Drainage & Flood Protection
Planning Engineer
Waterworks, Waste & Disposal Dept.

FROM: Mr. R. Amann, C.E.T.,
Technologist III
District No. 3 Operations

RE:

DATE: February 6, 1991

RF-1

RE: DYKING COMMISSIONER'S 1990 ANNUAL REPORT

Further to your memo dated January 24, 1991, we offer the following information:

1. For The Reporting Year

(a) Difficulties and problems encountered
- Nil

(b) Maintenance and repairs carried out
- No major repairs conducted
- Normal maintenance works carried out

(c) New sewer outfall gate structures constructed
- Nil

(d) Improvement and modifications carried out
- Nil in 1990, except for works completed as reported in last year's report

2. Proposed Plans For Future

General:

- Works are proposed at the following outfall structures.
- Syndicate outfall - proposed new outfall structure
- Selkirk outfall - proposed new outfall structure after riverbank stability monitoring (1 year)

.../2

With respect to the dyking system, the District is presently developing a "Flood Control Manual" in conjunction with your Branch.

With respect to apparent erosion and riverbank stability concerns:

(a) Evaluation of riverbanks stability in critical areas Selkirk Avenue Outfall - monitoring prior to outfall structure work commencing

(b) Monitoring of erosion of riverbanks in critical areas:

- Burrows Avenue outfall - Gully in front of outfall pipe
- Jefferson Avenue outfall -Gully in front of outfall pipe
- Rip-Rap deterioration
- St. John's Park - Riverbank erosion

(c) Any remedial work undertaken or completed
- Nil

R. Amann, C.E.T.,
Technologist III

RA/kar

DDM

RECEIVED
FEB 13 10 34 AM '91

THE CITY OF WINNIPEG

INTER-OFFICE MEMORANDUM

TO: D. D. McNeil, P. Eng.
Planning & Development Branch
Waterworks, Waste & Disposal Department

FROM: S. Dolhun, P. Eng.
District Engineer
District No. 4 Operations

RE: File No. S-40-10-02 **DATE:** 1991 02 06

RE: PRIMARY DYKING SYSTEM - DISTRICT NO. 4
1990 ANNUAL REPORT

RF-1

1. For the Reporting Year

   a) No difficulties or problems encountered.

   b) Routine maintenance - no repairs required.

   c) No new outfall gate structures constructed.

   d) No improvements or modifications carried out in 1990.

2. Proposed Plans for Future

   a) The District does not evaluate river bank stability. Any suspected problems are directed to the Streets and Transportation Department.

   b) Monitoring of erosion by the District is done primarily at outfalls as part of normal sewer maintenance inspections.

   c) No remedial works were undertaken in 1990.

3. Availability and Location of Proposed Borrow Pits

   No changes.

for S. Dolhun, P. Eng.

BT/sm

c.c. G. K. Stewart, P. Eng.

DDM

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THE CITY OF WINNIPEG

INTER-OFFICE MEMORANDUM

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TO: MR. D.D. McNEIL, P. Eng.,
Land Drainage and Flood
Protection Planning Engineer.

FROM: MR. G.E. SEARS, C.E.T.,
Technical Supervisor,
District #5.

DATE: 1991 02 21

RE: DYKING COMMISSIONER'S REPORT

Please find enclosed Primary Dyking System Questionnaire, as requested.

G Sears

MR. G.E. SEARS, C.E.T.,
Technical Supervisor,
District #5.

GES/ll

Encl.

cc: Mr. G.K. Stewart, P. Eng.,
Director of Operations.

PRIMARY DYKING SYSTEM QUESTIONNAIRE

DISTRICT #5

I. **FOR THE 1990 CALENDAR YEAR:**

Item (a): No difficulties or problems were encountered in 1990.

Item (b): (i) No major repairs were undertaken in 1990.

(ii) All culverts were inspected within the dyking system.

Item (c): (i) No new sewer outfall gate structures were constructed.

Item (d): (i) No improvements or modifications to the dyking system were carried out.

II. **PROPOSED PLANS FOR FUTURE:**

Item (a): Evaluation of Riverbank Stability in Critical Areas:

(i) Acquisition of property on Evans Street at the Seine River (discussions continuing).

(ii) District #5 Secondary Dyking Atlas completed in draft form.

Item (b): No monitoring of erosion took place in 1990.

Item (c): No remedial works were undertaken in 1990.

III. **AVAILABILITY AND LOCATION OF PROPOSED BORROW PITS:**

Proposed borrow pits are at the following locations:

. Whittier Park (area North of C.N.R. Highline)
. Area bounded by Provencher East, Dawson & Mission (nominal)
. River Road opposite from St. Vital Park (nominal)
. St. Vital South Regional Park - East of Sandrington
. South End Sewage Treatment Plant

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THE CITY OF WINNIPEG

INTER-OFFICE MEMORANDUM

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TO: Mr. T. Hansen
Administrative Assistant
Operations Department
820 Elgin Avenue

FROM: D. G. Gibson, P. Eng.
Assistant District Engineer
District 6, Operations

DATE: 1991 02 27

RE: PRIMARY DYKING SYSTEM WITHIN THE CITY OF WINNIPEG -
DYKING COMMISSIONER'S 1990 ANNUAL REPORT

As requested, we submit our annual report on the primary dyking system within District 6.

I. FOR THE CALENDAR YEAR ENDING DECEMBER 31, 1990:

a) No problems or difficulties were encountered.

b) Normal maintenance and repairs were carried out.

c) No new sewer outfall gate structures were constructed.

d) Major repair work has been completed on the Riverside Drive and Calrossie Boulevard outfall.

II. PROPOSED PLANS FOR THE FUTURE:

a) Repair work will be carried out on the Dieppe Road outfall. Work on this outfall will be completed before the spring of 1991.

b) An evaluation study in connection with the "Primary Dyking System", specifically, the location of the primary dyke, is presently underway by this District.

c) No evaluation of riverbank stability in critical areas are planned by the District. Evaluation may, however, be undertaken by private interest groups in connection with proposed developments.

d) No remedial works on riverbanks were undertaken by the District in 1990. The District is not carrying out any program of monitoring erosion along the riverbanks, but will advise the Waterworks, Waste and Disposal Department if an erosion problem is discovered.

III. AVAILABILITY AND LOCATION OF PROPOSED BORROW PITS:

Following is a list of borrow pit areas which, with the exception of the area described in (1), lie inside the primary dyking system and should be accessible at river levels reached in 1950. Actual quantities of borrow pits are not known; however, sites are sufficiently large that adequate material should be available:

1) Northeast corner of Oakenwald Avenue and North Drive;

2) Park area adjacent to South Drive between Kebir Place and Holly Avenue;

3) Oakenwald School grounds - westerly extremity of Manchester Boulevard North and South;

4) River Lots 17 and 18 east of Waverley Street and north of Lot 16 Drain;

5) Waverley Street from De Vos Road to Bison Drive -- large open tracts of land on either side of Waverley Street.

D. C. Gibson, P. Eng.

HH/ah

cc D. D. McNeil, P Eng.

FORM S: 88 08

THE CITY OF WINNIPEG

INTER-OFFICE MEMORANDUM

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To:	D.D. McNeil, P. Eng. Planning and Development Branch	**From:**	W. Naumko, P. Eng. Streets & Bridges Engineer Streets & Transportation Dept.
Re:	Our File: SG-11 (D8)A:GAK-348.WP	**Date:**	1991 02 07

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RE: DYKING COMMISSIONER'S 1990 ANNUAL REPORT

The Streets and Transportation Department undertook the following works in 1990:

RF-1

Kildonan Bridge Project	- monitoring of stabilization works undertaken in 1989. Measurements todate indicate the bank has been successfully stabilized
Bishop Grandin Boulevard Underpass	- completion of pump station in October 1990
McPhillips Street Underpass	- replaced pump chamber roof slab
Main/Norwood Bridge	- monitoring of slope indicators
Provencher Bridge	- monitoring of slope indicators
Charleswood Bridge	- monitoring of slope indicators

The following works are proposed for 1991:

Henderson Hwy./Bunn's Creek (concrete box culvert)	- installation of slope indicators proposed for 1991

GAK/cjk

THE UNIVERSITY OF MANITOBA

PHYSICAL PLANT

89 Freedman Crescent
Winnipeg, Manitoba
Canada R3T 2N2

January 25, 1991

File: 11.1.5

Mr. F. Penner, P.Eng.
Dyking Commissioner
Water Resources Branch
1577 Dublin Avenue
Winnipeg, Manitoba
R3E 3J5

Dear Mr. Penner:

Subject: Dyking Commissioner's 1990 Annual Report

The following is in response to the Questionnaire for the Annual Report on the Primary Dyking Systems Within the City of Winnipeg:

1. 1990 Calendar Year

   a) Difficulties and problems encountered: None.

   b) Maintenance and repairs carried out: Routine only, valve, bearings and all electric motors were checked at our storm sewer pumping station for satisfactory operation.

   c) New Sewer Outfall Gate Structures constructed: None.

   d) Improvements and modifications carried out: None.

2. Proposed Plans for the Future: None.

   Bank Stability:

   At present, no evaluation studies are underway in connection with the "Primary Dyking" system.

Bank slippage in the south east and north riverbank sections have been reviewed at several intervals throughout 1990 and normal lateral movement of less than 5 centimetres was observed.

Fifteen river bank location check points had been established, which have been monitored by University of Manitoba Physical Plant staff during 1990. No unusual bank slippage beyond 5 cm was detected.

The bank adjacent to the Wallace Building (Geological Sciences) site was monitored throughout 1990, by University of Manitoba Physical Plant staff, which will be continued on a regular basis. Bank slippage of less than 5 cm was detected.

3) Availability and Location of Proposed Borrow Pits:

No changes are suggested in the availability or location of proposed borrow pit for 1991.

Yours sincerely,

H. Frank
Director of Physical Plant

hf/nl

cc: Mr. T. G. Falconer, Vice President (Administration)
Dr. W. R. Wall, Associate Vice President (Administration)